UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,007	02/16/2001	Robert C. Blosser	0701.0670000	1567

26111   7590   01/27/2004

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EXAMINER
COUSO, YON JUNG

ART UNIT	PAPER NUMBER
2625	

DATE MAILED: 01/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

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EXAMINER
COUSO, YON JUNG

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/784,007	BLOSSER, ROBERT C.
	Examiner	Art Unit
	Yon Couso	2625

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *16 February 2001*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-30* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-30* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *16 February 2001* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2, 4*.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by
another filed in the United States before the invention by the applicant for patent or (2) a patent
granted on an application for patent by another filed in the United States before the invention by the
applicant for patent, except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application filed in the United States
only if the international application designated the United States and was published under Article 21(2)
of such treaty in the English language.

Claims 1-8, 16-18, 21 and 26 are rejected under 35 U.S.C. 102(e) as being

anticipated by Utagawa et al (US 6529640).

As per claim 1, Utagawa teaches a method for enhancing the performance of an

imaging device, comprising the steps of: (1) receiving first and second input pixels

having an initial intensity value, the first and second input pixels being obtained by a

imager having a fixed focal length (A22, A23, A24a and A 24b in figure 3); (2) forming a

first intermediate intensity value from the first input pixel based on the initial intensity

value of the first input pixel and the value of a first weighting factor (A27a in figure 3); (3)

forming a second intermediate intensity value from the second image pixel based on the

initial intensity value of the second input pixel and the value of a second weighting factor

(A27b in figure 3); and (4) combining the first and second intermediate intensity values

to form an output pixel (A29 in figure 3).

As per claim 2, Utagawa teaches that the step (1) comprises the step of receiving

a group of input pixels to be used in forming the output pixel of step (4) (A in figure 5)

As per claim 3, Utagawa teaches that the step (4) comprises the step of combining one intermediate intensity value formed from each input pixel of the group to form the output pixel (C, D and e in figure 5).

As per claim 4, Utagawa teaches that the step (1) comprises the step of receiving a group of at least sixteen input pixels (A and B in figure 5).

As per claim 5, Utagawa teaches that the step (4) comprises the step of forming at least eight output pixels (E in figure 5).

As per claim 6, Utagawa teaches that the each steps of (2) and (3) comprises the step of multiplying the initial intensity value by at least eight weighting factors to form at least eight intermediate intensity values (column 15, lines 1-11).

As per claim 7, Utagawa teaches that the step (4) comprises the step of adding one intermediate intensity value formed in step (2) with one intermediate intensity value formed in step (3) to form one output pixel (C, D and E in figure 5).

As per claims 8 and 26, Utagawa teaches that the selecting the first and second weighting factors in accordance with an interpolation function (column 15, lines 1-11).

As per claim 16, Utagawa teaches a system for enhancing the performance of an imaging device having a fixed focal length, comprising: a pixel receiving module to receive and temporarily store pixels obtained by an imager (A22, A23, A24a, A24b, A25a, A25b, A26a and A26b in figure 3); a pixel weighting module coupled to the pixel receiving module for forming intermediate intensity values based on weighting values and intensity values of pixels stored in the pixel receiving module (A27a and A27b in figure 3); and a pixel combining module coupled to the pixel weighting module for

forming output pixels based on the intermediate intensity values formed by the pixel weighting module (A29 in figure 3).

As per claim 17, Utagawa teaches that the pixel receiving module is a buffer capable of receiving and temporarily storing a predetermined number of pixels (A26a and A26b in figure 3).

As per claim 18, Utagawa teaches a plurality of weighting cells coupled to the buffer, wherein each of the plurality of weighting cells receives at least two inputs, one input comprises a pixel intensity value form the buffer and one input comprising a weighting value, and wherein each of the plurality of weighting cells combines the at least two inputs to form an intermediate intensity value (C, D and E in figure 5).

As per claim 21, Utagawa teaches a method for transforming image resolution, comprising the steps of: (1) retrieving an image having an initial resolution from a memory, the image comprising a first and second original pixel having an initial intensity value (A in figure 6); (2) forming a first intermediate intensity value from the first original pixel based on the initial intensity value of the first original pixel and the value of a weighting factor (C in figure 6); (3) forming a second intermediate intensity value from the second original pixel based on the initial intensity value of the second original pixel and the value of a second weighting factor (D in figure 6); (4) combining the first and second intermediate intensity values to form an interpolated pixel (ADDITION in figure 6); and (5) repeating steps (2) through (4) for additional pixels of the pixels of the image to form a copy of the image having a resolution that is different than the initial resolution (figure 6).

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 9-11 and 27-29 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Utagawa et al (US 6529640) in view of Holst "Sampling, Aliasing, and

Data Fidelity for Electronic Imaging Systems, Communications, and Data Acquisition".

The arguments advanced in paragraph 1 above as to the applicability of the

reference are incorporated herein.

Utagawa clearly teaches interpolation (A27a and A27b in figure 3). However,

Utagawa does not teach details on specific interpolation functions, such as a cubic B-

spline function, an nth–order spline function and a sinc function. Holst discloses under

6.5 Interpolation Algorithms that many interpolation filters are modified sinc functions

(page 145, beginning of second full paragraph. Holst also explains different interpolation

functions, including cubic B-spline and an n-th order functions (page 144-154). A cubic

B-spline function, an nth–order spline function and a sinc function are old and well-

known interpolation functions used in the art that incorporation of any specific function

into the Utagawa's reference which already teaches interpolation function would have

been obvious to one of ordinary skill in the art, at the time the invention was made.

3.   Claims 12-15, 19, 20, 23, 24 and 25 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Utagawa et al (US 6529640) in view of Westell (EP-503,104

A1).

The arguments advanced in paragraph 1 above as to the applicability of the

reference are incorporated herein.

As per claims 12 and 23, even though Utagawa clearly teaches combining the

first and second intermediate intensity values to form an output pixel (A29 in figure 3),

Utagawa does not teach details on forming a number of output pixels that is less than

the number of input pixels received in step (1). Westell teaches an fixed focal imaging

system which interpolates input images and combining the interpolated image values to

form output pixels that is less than the number of input pixels (column 9, line 46-column

16, line 22). Utagawa teaches interpolation, it is obvious to one of ordinary skill in the art

that the interpolation can increase or decrease size/resolution. Given the references, at

the time the invention was made, it would have been obvious to one of ordinary skill in

the art to incorporate Westell's specific teachings of, combining the interpolated image

values to form output pixels that is less than the number of input pixels, into Utagawa

which already teaches combining the first and second intermediate intensity values to

form an output pixel. Merely specifying the size of output pixels in the art of interpolation

lacks any criticality.

As per claims 13 and 19, Westell teaches that the number of output pixels

formed by the pixel combining module is selected based on a distance between the

imager and an object (column 9, lines 8-14).

As per claims 14 and 20, Westell teaches that the number of output pixels formed by the pixel combining module is dynamically adjusted based on a change in distance between the imager and an object (column 9, lines 8-14).

As per claims 15 and 24, Westell teaches low-pass filtering of the input pixels (column 25, lines 54-57).

As per claim 25, Utagawa teaches combining one intermediate intensity value formed from each original pixel of the group to form the interpolated pixel (C, D and E in figure 5).

4.   Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Utagawa et al (US 6529640).

The arguments advanced in paragraph 1 above as to the applicability of the reference are incorporated herein.

As per claim 22, Utagawa does not teach details on step of retrieving the image from a network server used to store images. However, once the image is formed and converted in digital data stream, it is obvious to any one of ordinary skill in the art to recognize the data can be stored locally, stored in the network server or processed and stored away at any location in the system or in the network. Given the system taught in Utagawa, which teaches converting image data into digital image data, it would have been obvious to one of ordinary skill in the art to store image data in the network server and retrieve from the server when needed.

5.   Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Utagawa et al (US 6529640) in view of Brogliatti et al (US 6564225).

The arguments advanced in paragraph 1 above as to the applicability of the reference are incorporated herein.

As per claim 30, Utagawa does not teach details on forming a copy of the image having a resolution that is determined based on a requester's access rights. However, Brogliatti discloses on forming a copy of the image having a resolution that is determined based on a requester's access rights (Table 5 at column 6). Brogliatti's teaching can be applicable to any kind/type of images where security could be of concern. Incorporation of the security feature taught in the Brogliatti's reference into any sensitive image database system would have been obvious to one of ordinary skill in the art because it would permit the access to the requester's with proper access right, Mere incorporation of security feature into the Utagawa reference is not deemed to be patentably significant.

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
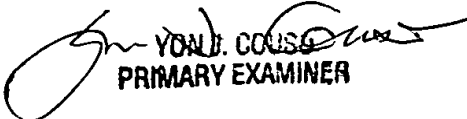
Lareau et al and Mathews et al are also cited.

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yon Couso whose telephone number is (703) 305-4779. The examiner can normally be reached on 8:30 am –5:00 pm from Monday to Friday

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 305-

3800.

YONG J. COUSO
PRIMARY EXAMINER

Yjc

December 11, 2003